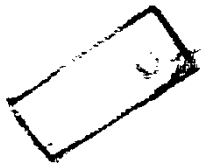


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**TAXONOMIC REVISION OF SOME SPECIES OF CAPPARIDACEAE
IN EGYPT AND ITS VERIFICATION
BY SOME CRITERIA**

A THESIS
SUBMITTED FOR THE PH. D. DEGREE
IN BOTANY



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This work is dedicated with homage to :

The memory of my father

My mother

My sister

My family



This thesis has not been submitted for
a degree at this or any other university, and is
the original work of the writer.

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C O N T E N T S

Chapter I

Introduction and aim of the work.....	1
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Chapter II

Systematic revision of Capparis species in Egypt.

A. Introduction.....	2
B. Taxonomic Concepts.....	4
C. Collections.....	4
D. Taxonomic Treatment.....	5
Key to the species and varieties.....	6
1. <u>Capparis spinosa</u> L.	
a. <u>C. spinosa</u> var. <u>spinosa</u>	7
b. <u>C. spinosa</u> var. <u>aegyptia</u> Boiss.....	9
c. <u>C. spinosa</u> var. <u>inermis</u> Turra.....	12
2. <u>Capparis ovata</u> Desf.....	
a. <u>C. ovata</u> var. <u>ovata</u> Davis.....	15
b. <u>C. ovata</u> var. <u>canescens</u> Heywood.....	17
3. <u>Capparis cartilaginea</u> Dece.....	19
4. <u>Capparis decidua</u> Edgew.....	22
General Comment.....	25

Chapter III

Ecological Studies.

I- Geology and Geomorphology.....	26
II- Water Resources.....	32

III- Habitat Conditions of the studied <u>Capparis</u> species.	
A. Edaphic Conditions.....	38
B. Climate.....	47
IV- Communities.....	52
General Comment.....	57

Chapter IV.

Cytological Studies.

Introduction.....	61
I- Mitotic Process and Chromosome numbers.....	61
Materials and Methods.....	62
Results.....	63
II- Protein Analysis.....	64
Protein extraction.....	64
Protein separation technique.....	64
Results.....	68
General Comments.....	70

Chapter V.

Phytochemical Studies.

Sur	Introduction.....	72
Lit	Materials.....	78
	Preliminary Phytochemical Screening.....	79
	Investigation of the Lipids in the studied <u>Capparis</u> species.	
	Lipid Content.....	85
	Determination of the Unsaponifiable Matter and Total Fatty Acids.....	86
	Fractionation of the Unsaponifiable Matter.....	87

CHAPTER I

INTRODUCTION AND AIM OF THE WORK

INTRODUCTION AND AIM OF THE WORK

The Capparidaceae is a family of about 46 genera and 700 species distributed throughout the warmer and tropical parts of the earth. It is represented in the Egyptian wild flora by 7 genera and 25 species. The largest of these genera are Capparis (6 species) and Cleome (9 species). Two genera are monotypic and these are Dipterygium and Gynandropsis. Cadaba has three species and Boscia and Maerua have two species for each. (Montasir and Hassib, 1956 and Täckholm, 1956 & 1974) .

The Egyptian Capparidaceous taxa belong to the xerophytic community except for Gynandropsis gynandra which is common among the weed flora of the cultivated fields and irrigation channels . Most of the plants are perennials and they represent about 88 % of the total number of the species . The perennials are usually fruticose in the sense that they are woody.

Taxa of Capparis, native to Egypt are distinctly woody perennials with a wide distributional range. They are mainly confined to rocky habitats of several ecological territories of the country .

One of the aims of the present investigation is to revise critically the different taxa of Capparis in relation to their ecological and distributional ranges in Egypt .

Cytological as well as phytochemical studies will be also conducted which may help in a better understanding of the taxonomy of the native taxa of Capparis in Egypt .

CHAPTER II

TAXONOMIC STUDIES

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S Y S T E M A T I C R E V I S I O N

A. Introduction

The large tropical and subtropical genus Capparis L. is represented in the Mediterranean and in the Near Eastern countries by a few species and a number of varieties, which have been partly misidentified in the Herbaria and in the Floras concerned .

Zohary (1960) reviewed the Capparis species occurring in the Mediterranean and Near Eastern countries . Six species were recognized by this author with an attempt to clarify their taxonomy and nomenclature as well as their phylogenetical relationships .

Täckholm (1974) reported the occurrence of 6 species in Egypt . She pointed out that Capparis aegyptia is closely related to Capparis leucophylla, Capparis deserti and Capparis orientalis which are sometimes considered as varieties of it .

Al - Gohary (1982) discussed the relative taxonomic ranks of the studied Egyptian Capparis species and pointed out that C. aegyptia with slightly zygomorphic flowers, + glabrous and rounded leaves with prominent spiny stipules seems to represent the more primitive type of this group . The different variations were considered to take from Capparis aegyptia :

- a) C. cartilaginea and C. decidua show a characterized tendency to strong zygomorphy. In this line, C. decidua seemed to be more advanced as exhibiting flowers in cluster and due to its deciduous nature

of leaves .

- b) A conspicuous indumentum, which is suggested to represent adaptation to xerophytic condition, in C. leucophylla and C. deserti ; the latter is also characterized by microphyll .
- c) A tendency to loss of stipules in C. orientalis which seems with some other characteristics as its rather succulent leaves and relatively large flowers to resemble coastal habitat .

Thus, it is suggested that the different Capparis taxa of Egypt may represent cultigens of C. aegyptia that might have resulted by possession of new morphological characters at different habitats. This assumption could be supported by the statement of Zohary (1960) that the variety aegyptia (C. aegyptia) represents a mesophytic type of Capparis which through selection by man for larger flower buds during centuries has considerably diverged from its original form . He added that different ecotypes of this variety might result at different habitats e.g. var. spinosa of the North Mediterranean .

B. Taxonomic Concepts

The following characters proved to be useful for systematic revision of the Egyptian taxa of Capparis . These are arranged according to their systematic value as follows :

- 1- Foliar characters in particular blade shape, presence or absence of an apical mucro as well as the presence or absence of spiny stipules.
- 2- Flowers axillary, solitary or in corymbose clusters .
- 3- Sepals galeate or not ; petals white or red .
- 4- Shape and size of berry; ripened epicarp white, green or red; ripened endocarp creamy to yellow or red Fig.a.
- 5- Habit ranging from pendulous to procumbent or erect ; plants hairy to glabrous .

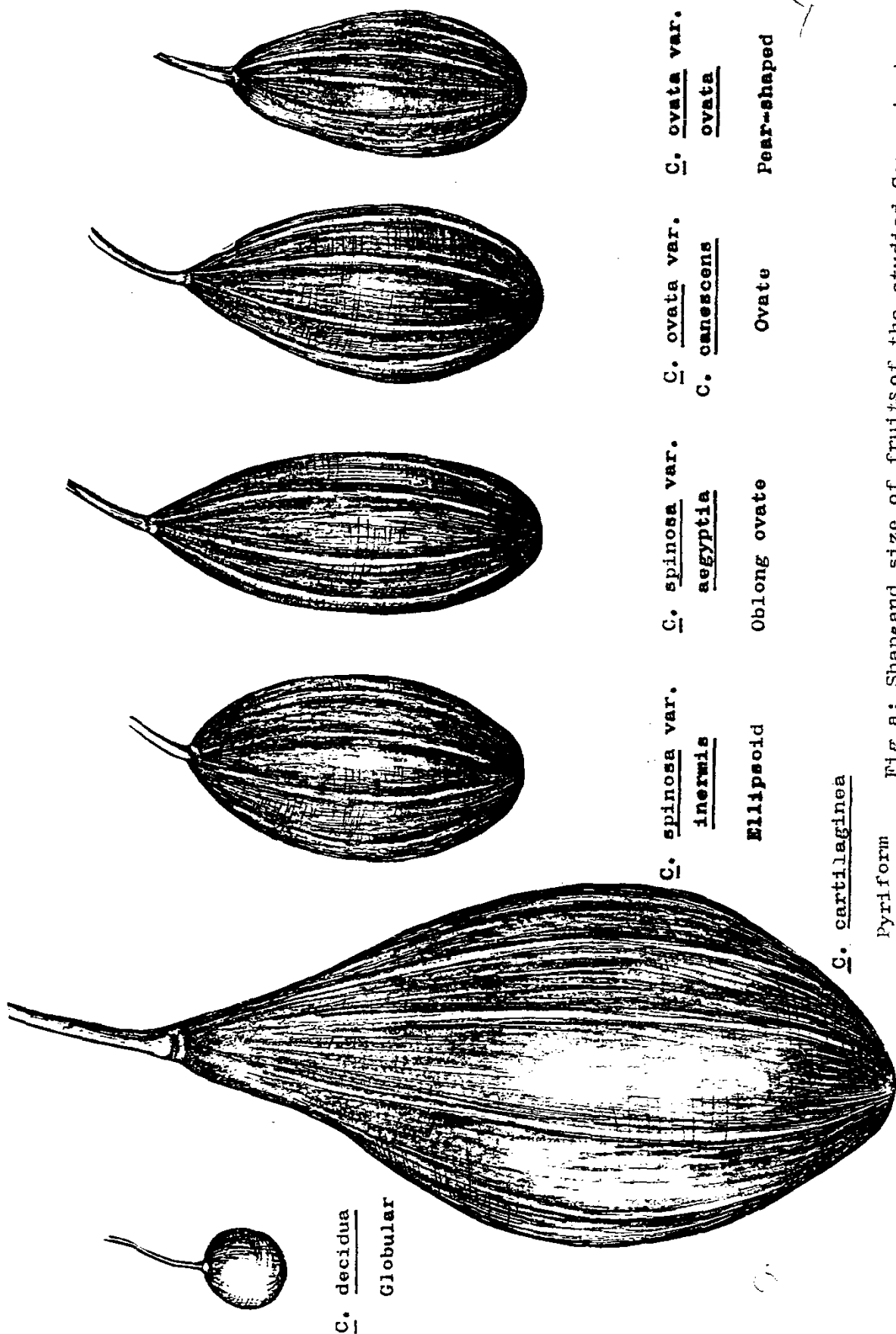
C. Collections

The present study is based on collections kept in the Cairo University Herbarium (CAI) . In addition, fresh materials of most of the taxa were studied and field observations were also recorded from several localities of Mediterranean region, Eastern and Western Deserts, Oases, Sinai and Red Sea Coastal area .

For each species, the revised specimens are grouped according to the ecological territories of Egypt El Hadidi (1980 p. 10), (Map a) . Within each territory, specimens are arranged according to the sequence of location from North to South, from West to East, and according to the date of collections .

A distribution map and an illustration for each taxon are provided .

2



C. decidua
Globular

C. spinosa var. inermis Ellipsoid
C. spinosa var. aegyptia Oblong ovate
C. canescens Ovate
C. ovata var. ovata Pear-shaped

C. cartilaginea

Pyriform Fig. a: Shape and size of fruits of the studied Capparis taxa.